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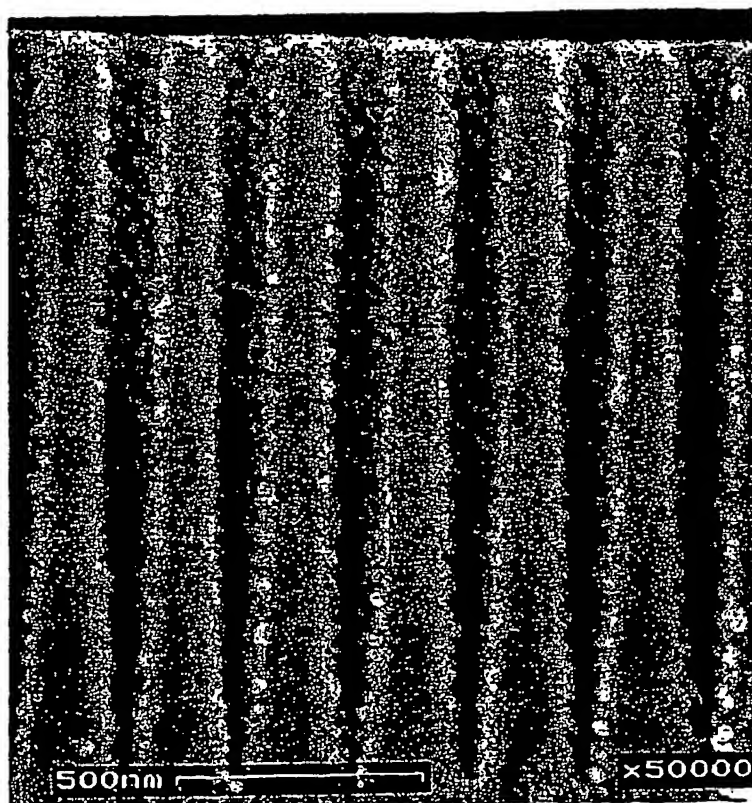
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(54) Title: ATOMIC LAYER DEPOSITION USING METAL AMIDINATES



(57) Abstract: Metal films are deposited with uniform thickness and excellent step coverage. Copper metal films were deposited on heated substrates by the reaction of alternating doses of copper(I) *NN'*-diisopropylacetamidinate vapor and hydrogen gas. Cobalt metal films were deposited on heated substrates by the reaction of alternating doses of cobalt(II) *bis(N,N'*-diisopropylacetamidinate) vapor and hydrogen gas. Nitrides and oxides of these metals can be formed by replacing the hydrogen with ammonia or water vapor, respectively. The films have very uniform thickness and excellent step coverage in narrow holes. Suitable applications include electrical interconnects in microelectronics and magnetoresistant layers in magnetic information storage devices.



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